

What is claimed is:

1. A dual-stage optical isolator comprising:
  - a first stage disposed along an optical path; and
  - a second stage disposed along said path and rotated 90° with respect to said
- 5 first stage.
2. The optical isolator of claim 1, wherein said first stage comprises:
  - a first birefringent wedge having an optic axis and a first wedge angle;
  - a second birefringent wedge having an optic axis 45° apart from said optic
  - axis of said first birefringent wedge and a second wedge angle; and
  - a first faraday rotator disposed between said first and second wedges.
3. The optical isolator of claim 2, wherein said first and second wedge angles are substantially equal.
4. The optical isolator of claim 3, wherein said first faraday rotator is configured to rotate the polarization of applied light by 45°.
5. The optical isolator of claim 4, wherein said second stage comprises:
  - a third birefringent wedge having an optic axis 90° apart from the second
  - birefringent wedge and a third wedge angle;
  - a fourth birefringent wedge having an optic axis 45° apart from the third
  - 20 birefringent wedge and a fourth wedge angle; and
  - a second faraday rotator disposed between said third and fourth wedges for rotating a polarization plane by 45°.

6. An optical isolator comprising:
- a first stage configured to refract a light ray applied in a forward direction into a first ray and a second ray; and
  - a second stage rotated  $90^\circ$  with respect to said first stage and configured to
- 5           refract said first and second rays in a substantially parallel manner.
7. The optical isolator of claim 6, wherein said first ray is the e-ray with respect to said first stage and is the o-ray with respect to said second stage, and said second ray is the o-ray with respect to said first stage and is the e-ray with respect to said second stage.
8. The optical isolator of claim 7 further configured such that said e- and o-rays exit from said second stage having orthogonal polarizations and separated by a walk-off distance, thereby forming a plane.
9. The optical isolator of claim 8, wherein said first stage comprises:
- a first birefringent wedge having an optic axis and a first wedge angle;
  - a second birefringent wedge having an optic axis  $45^\circ$  apart from said first birefringent wedge and a second wedge angle; and
  - a first faraday rotator disposed between said first and second wedges having a polarization plane rotation angle of  $45^\circ$ .
10. The optical isolator of claim 9, wherein said first and second wedge angles are
- 20           substantially equal.
11. The optical isolator of claim 10, wherein said first faraday rotator is configured to rotate the polarization of applied light by  $45^\circ$ .

12. The optical isolator of claim 9, wherein said second stage comprises:
- a third birefringent wedge having an optic axis angle  $90^\circ$  apart from said second birefringent and a third wedge angle;
  - a fourth birefringent wedge having an optic axis angle  $45^\circ$  apart from said third birefringent wedge and a fourth wedge angle; and
  - a second faraday rotator disposed between said third and fourth wedges having polarization plane rotating angle of  $45^\circ$ .
13. The optical isolator of claim 12, wherein said second faraday rotator is configured to rotate the polarization of applied light by  $45^\circ$ .
14. The optical isolator of claim 13, wherein a rotation direction of said first and second faraday rotators is at least one of a same and opposite direction.
15. An optical isolator comprising:
- first means for refracting a light ray applied in a forward direction into a first ray and a second ray; and
  - second means, rotated  $90^\circ$  with respect to said first means, for refracting said first and second rays in a substantially parallel manner.
16. The optical isolator of claim 15, wherein said first ray is an e-ray with respect to said first means and is an o-ray with respect to said second means, and said second ray is the o-ray with respect to said first means and is the e-ray with respect to said second means.

17. The optical isolator of claim 16, wherein said e- and o-rays exit from said second means having orthogonal polarizations and separated by a walk-off distance, thereby forming a plane.
18. The optical isolator of claim 17, wherein said first means comprises:
- 5 a first birefringent means having an optic axis and a first angle;  
a second birefringent means having an optic axis  $45^\circ$  apart from said first birefringent means and a second angle; and  
a first rotator means disposed between said first and second means for rotating a polarization plane of applied light by  $45^\circ$ .
19. The optical isolator of claim 18, wherein said first and second angles are substantially equal.
20. The optical isolator of claim 18, wherein said second means comprises:
- 15 a third birefringent means having an optic axis angle  $90^\circ$  apart from said second birefringent means and a third angle;  
a fourth birefringent means having an optic axis angle  $45^\circ$  apart from said third birefringent means and a fourth angle; and  
a second rotator means disposed between said third and fourth means for rotating a polarization plane of applied light by  $45^\circ$ .